

ABSTRACT

An antenna device for transmitting and receiving radio frequency waves, installable in a communication device includes an antenna structure switchable between a plurality of antenna configuration states. Each antenna configuration state is distinguished by a set of radiation parameters, such as resonance frequency, input impedance, bandwidth, radiation pattern, gain, polarization, and near-field pattern. A switching device selectively switches the antenna structure between the plurality of antenna configuration states. The antenna device further includes a first receiver which receives a first measured operation parameter indicative of the quality of transmission of radio frequency waves by the antenna structure, and a second receiver which receives a second measured operation parameter indicative of the quality of reception of radio frequency waves by the antenna structure. The antenna device also includes a control device which controls the switching device, and thus the selective switching of the antenna structure between the plurality of antenna configuration states, in accordance with the first and second measured operation parameters, so as to improve the quality of transmission and/or reception.